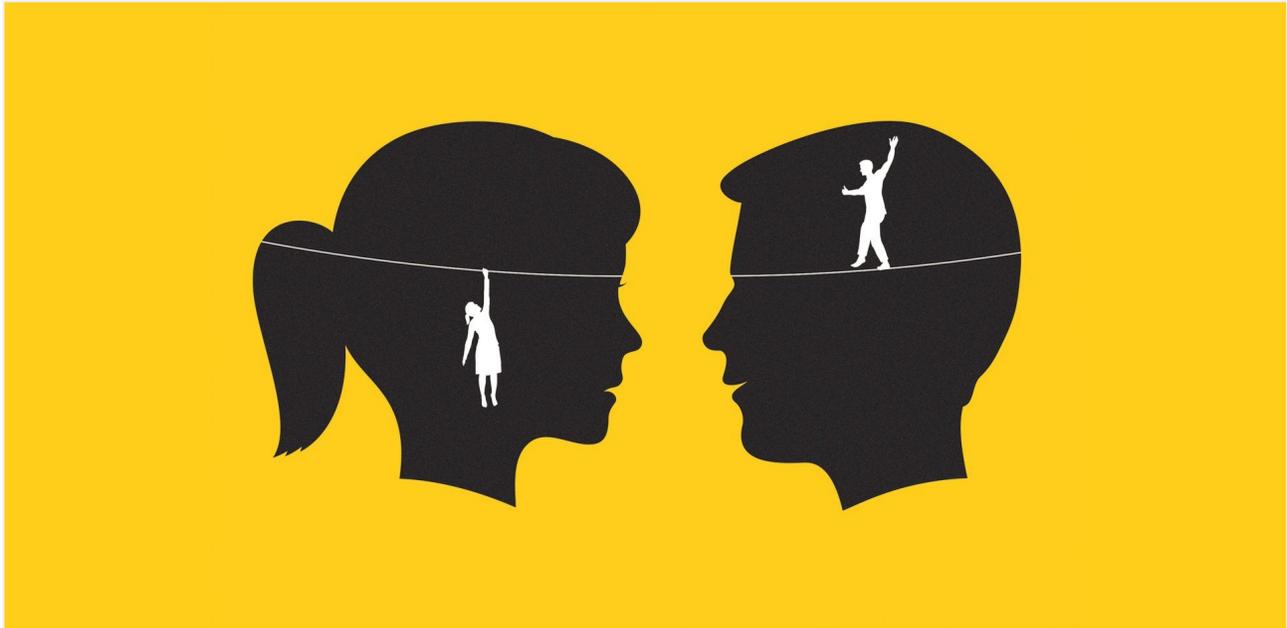


The Confidence Gap

Evidence shows that women are less self-assured than men—and that to succeed, confidence matters as much as competence. Here's why, and what to do about it.



KATTY KAY AND CLAIRE SHIPMAN

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FOR YEARS, we women have kept our heads down and played by the rules. We've been certain that with enough hard work, our natural talents would be recognized and rewarded.

We've made undeniable progress. In the United States, women now earn more college and graduate degrees than men do. We make up half the workforce, and we are closing the gap in middle management. Half a dozen global studies, conducted by the likes of Goldman Sachs and Columbia University, have found that companies employing women in large numbers outperform their competitors on every measure of profitability. Our competence has never been more obvious.

Those who closely follow society's shifting values see the world moving in a female direction.



The authors, Claire Shipman (left), a reporter for ABC News, and Katty Kay (right), the anchor of BBC World News America. In two decades of covering American politics, they have interviewed some of the most influential women in the nation. They were surprised to discover the extent to which these women suffered from self-doubt. (Henry Leutwyler)

And yet, as we've worked, ever diligent, the men around us have continued to get promoted faster and be paid more. The statistics are well known: at the top, especially, women are nearly absent, and our numbers are barely increasing. Half a century since women first forced open the boardroom doors, our career trajectories still look very different from men's.

Some observers say children change our priorities, and there is some truth in this claim. Maternal instincts do contribute to a complicated emotional tug between home and work lives, a tug that, at least for now, isn't as fierce for most men. Other commentators point to cultural and institutional barriers to female success. There's

truth in that, too. But these explanations for a continued failure to break the glass ceiling are missing something more basic: women's acute lack of confidence.

The elusive nature of confidence has intrigued us ever since we started work on our 2009 book, *Womenomics*, which looked at the many positive changes unfolding for women. To our surprise, as we talked with women, dozens of them, all accomplished and credentialed, we kept bumping up against a dark spot that we couldn't quite identify, a force clearly holding them back. Why did the successful investment banker mention to us that she didn't really deserve the big promotion she'd just got? What did it mean when the engineer who'd been a pioneer in her industry for decades told us offhandedly that she wasn't sure she was really the best choice to run her firm's new big project? In two decades of covering American politics as journalists, we realized, we have between us interviewed some of the most influential women in the nation. In our jobs and our lives, we walk among people you would assume brim with confidence. And yet our experience suggests that the power centers of this nation are zones of female self-doubt—that is, when they include women at all.

We know the feeling firsthand. Comparing notes about confidence over dinner one night last year, despite how well we knew each other, was a revelation. Katty got a degree from a top university, speaks several languages, and yet had spent her life convinced that she just wasn't intelligent enough to compete for the most-prestigious jobs in journalism. She still entertained the notion that her public profile in America was thanks to her English accent, which surely, she suspected, gave her a few extra IQ points every time she opened her mouth.



QUIZ: Take the authors' [confidence assessment](#).

Claire found that implausible, laughable really, and yet she had a habit of telling people she was “just lucky”—in the right place at the right time—when asked how she became a CNN correspondent in Moscow while still in her 20s. And she, too, for years, routinely deferred to the alpha-male journalists around her, assuming that because they were so much louder, so much more certain, they just knew more. She subconsciously believed that they had a right to talk more on television. But were they really more competent? Or just more self-assured?

We began to talk with other highly successful women, hoping to find instructive examples of raw, flourishing female confidence. But the more closely we looked, the more we instead found evidence of its shortage.

VIDEO: The authors discuss the confidence gap with *The Atlantic's* Hanna Rosin.

The All-Star WNBA player Monique Currie, of the Washington Mystics, displays dazzling agility and power on the basketball court. On the subject of confidence, however, she sounded disconcertingly like us. Currie rolled her eyes when we asked whether her wellspring of confidence was as deep as that of a male athlete. “For guys,” she said, in a slightly mystified, irritated tone, “I think they have maybe 13- or 15-player rosters, but all the way down to the last player on the bench, who doesn’t get to play a single minute, I feel like his confidence is just as big as the superstar of the team.” She smiled and shook her head. “For women, it’s not like that.”

The tech entrepreneur Clara Shih, who founded the successful social-media company Hearsay Social in 2010 and joined the board of Starbucks at the tender age of 29, is one of the few female CEOs in the still-macho world of Silicon Valley. But as an undergrad at Stanford, she told us, she was convinced that courses she found difficult were easy for others. Although Shih would go on to graduate with the highest GPA of any computer-science major in her class, she told us that at times she “felt like an imposter.” As it happens, this is essentially what Facebook COO Sheryl Sandberg told us a year before her book, *Lean In*, was published: “There are still days I wake up feeling like a fraud, not sure I should be where I am.”

We were inspired by these conversations, and many more, to write a book on the subject, with a particular eye to whether a lack of confidence might be holding women back. We ended up covering much more territory than we'd originally anticipated, ranging from the trait's genetic components to how it manifests itself in animals to what coaches and psychologists have learned about cultivating it. Much of what we discovered turns out to be relevant to both women and men.

Even as our understanding of confidence expanded, however, we found that our original suspicion was dead-on: there *is* a particular crisis for women—a vast confidence gap that separates the sexes. Compared with men, women don't consider themselves as ready for promotions, they predict they'll do worse on tests, and they generally underestimate their abilities. This disparity stems from factors ranging from upbringing to biology.

A growing body of evidence shows just how devastating this lack of confidence can be. Success, it turns out, correlates just as closely with confidence as it does with competence. No wonder that women, despite all our progress, are still woefully underrepresented at the highest levels. All of that is the bad news. The good news is that with work, confidence can be acquired. Which means that the confidence gap, in turn, can be closed.



THE SHORTAGE OF female confidence is increasingly well quantified and well documented. In 2011, the Institute of Leadership and Management, in the United Kingdom, surveyed British managers about how confident they feel in their professions. Half the female respondents reported self-doubt about their job performance and careers, compared with fewer than a third of male respondents.

Linda Babcock, a professor of economics at Carnegie Mellon University and the author of *Women Don't Ask*, has found, in studies of business-school students, that men initiate salary negotiations four times as often as women do, and that when women do negotiate, they ask for 30 percent less money than men do. At Manchester Business School, in England, professor Marilyn Davidson has seen the same phenomenon, and believes that it comes from a lack of confidence. Each year she asks her students what they expect to earn, and what they deserve to earn, five years after graduation. "I've been doing this for about seven years," she has written, "and every year there are massive differences between the male and

female responses.” On average, she reports, the men think they deserve \$80,000 a year and the women \$64,000—or 20 percent less.

A meticulous 2003 study by the Cornell psychologist David Dunning and the Washington State University psychologist Joyce Ehrlinger homed in on the relationship between female confidence and competence. At the time, Dunning and a Cornell colleague, Justin Kruger, were just finishing their seminal work on something that’s since been dubbed the Dunning-Kruger effect: the tendency for some people to substantially overestimate their abilities. The less competent people are, the more they overestimate their abilities—which makes a strange kind of sense.

Dunning and Ehrlinger wanted to focus specifically on women, and the impact of women’s preconceived notions about their own ability on their confidence. They gave male and female college students a quiz on scientific reasoning. Before the quiz, the students rated their own scientific skills. “We wanted to see whether your general perception of *Am I good in science?* shapes your impression of something that should be separate: *Did I get this question right?*,” Ehrlinger said. The women rated themselves more negatively than the men did on scientific ability: on a scale of 1 to 10, the women gave themselves a 6.5 on average, and the men gave themselves a 7.6. When it came to assessing how well they answered the questions, the women thought they got 5.8 out of 10 questions right; men, 7.1. And how did they actually perform? Their average was almost the same—women got 7.5 out of 10 right and men 7.9.

To show the real-world impact of self-perception, the students were then invited—having no knowledge of how they’d performed—to participate in a science competition for prizes. The women were much more likely to turn down the opportunity: only 49 percent of them signed up for the competition, compared with 71 percent of the men. “That was a proxy for whether women might seek out certain opportunities,” Ehrlinger told us. “Because they are less confident in general in their abilities, that led them not to want to pursue future opportunities.”

In studies, men overestimate their abilities and performance, and women underestimate both. Their performances do not differ in quality.

Talking with Ehrlinger, we were reminded of something Hewlett-Packard discovered several years ago, when it was trying to figure out how to get more women into top management positions. A review of personnel records found that women working at HP applied for a promotion only when they believed they met 100 percent of the qualifications listed for the job. Men were happy to apply when they thought they could meet 60 percent of the job requirements. At HP, and in study after study, the data confirm what we instinctively know. Underqualified and underprepared men don't think twice about leaning in. Overqualified and overprepared, too many women still hold back. Women feel confident only when they are perfect. Or practically perfect.

Brenda Major, a social psychologist at the University of California at Santa Barbara, started studying the problem of self-perception decades ago. "As a young professor," she told us, "I would set up a test where I'd ask men and women how they thought they were going to do on a variety of tasks." She found that the men consistently overestimated their abilities and subsequent performance, and that the women routinely underestimated both. The actual performances did not differ in quality. "It is one of the most consistent findings you can have," Major says of the experiment. Today, when she wants to give her students an example of a study whose results are utterly predictable, she points to this one.

On the other side of the country, the same thing plays out every day in Victoria Brescoll's lecture hall at Yale's School of Management. M.B.A. students are nurtured specifically to project confidence in the fashion demanded by today's business world. But although all of her students are top-of-the-chart smart, she's been startled to uncover her female students' lack of belief in themselves.

"There's just a natural sort of feeling among the women that they will not get a prestigious job, so why bother trying," she explained. "Or they think that they are

not totally competent in the area, so they're not going to go for it." As a result, female students tend to opt out. "They end up going into less competitive fields, like human resources or marketing," she said. "They don't go for finance, investment banks, or senior-track faculty positions."

Do men doubt themselves sometimes? Of course. But they don't let their doubts stop them as often as women do.

And the men?

"I think that's really interesting," Brescoll said with a laugh, "because the men go into everything just assuming that they're awesome and thinking, *Who wouldn't want me?*"

Do men doubt themselves sometimes? Of course. But not with such exacting and repetitive zeal, and they don't let their doubts stop them as often as women do. If anything, men tilt toward overconfidence—and we were surprised to learn that they come by that state quite naturally. They aren't *consciously trying* to fool anyone. Ernesto Reuben, a professor at Columbia Business School, has come up with a term for this phenomenon: *honest overconfidence*. In a study he published in 2011, men consistently rated their performance on a set of math problems to be about 30 percent better than it was.

We were curious to find out whether male managers were aware of a confidence gap between male and female employees. And indeed, when we raised the notion with a number of male executives who supervised women, they expressed enormous frustration. They said they believed that a lack of confidence was fundamentally holding back women at their companies, but they had shied away from saying anything, because they were terrified of sounding sexist. One male senior partner at a law firm told us the story of a young female associate who was excellent in every respect, except that she didn't speak up in client meetings. His takeaway was that she wasn't confident enough to handle the client's account. But he didn't know how to raise the issue without causing offense. He eventually

concluded that confidence should be a formal part of the performance-review process, because it is such an important aspect of doing business.



THE FACT IS, overconfidence can get you far in life. Cameron Anderson, a psychologist who works in the business school at the University of California at Berkeley, has made a career of studying overconfidence. In 2009, he conducted some novel tests to compare the relative value of confidence and competence. He gave a group of 242 students a list of historical names and events, and asked them to tick off the ones they knew.

Among the names were some well-disguised fakes: a Queen Shaddock made an appearance, as did a Galileo Lovano, and an event dubbed Murphy's Last Ride. The experiment was a way of measuring excessive confidence, Anderson reasoned. The fact that some students checked the fakes instead of simply leaving them blank suggested that they believed they knew more than they actually did. At the end of the semester, Anderson asked the students to rate one another in a survey designed

to assess each individual's prominence within the group. The students who had picked the most fakes had achieved the highest status.

Confidence, Anderson told us, matters just as much as competence. We didn't want to believe it, and we pressed him for alternative theories. But deep down, we knew we'd seen the same phenomenon for years. Within any given organization, be it an investment bank or the PTA, some individuals tend to be more admired and more listened to than others. They are not necessarily the most knowledgeable or capable people in the room, but they are the most self-assured.

“When people are confident, when they think they are good at something, regardless of how good they actually are, they display a lot of confident nonverbal and verbal behavior,” Anderson said. He mentioned expansive body language, a lower vocal tone, and a tendency to speak early and often in a calm, relaxed manner. “They do a lot of things that make them look very confident in the eyes of others,” he added. “Whether they are good or not is kind of irrelevant.” *Kind of irrelevant*. Infuriatingly, a lack of competence doesn't necessarily have negative consequences. Among Anderson's students, those who displayed more confidence than competence were admired by the rest of the group and awarded a high social status. “The most confident people were just considered the most beloved in the group,” he said. “Their overconfidence did not come across as narcissistic.”

That is a crucial point. True overconfidence is not mere bluster. Anderson thinks the reason extremely confident people don't alienate others is that they *aren't faking it*. They genuinely believe they are good, and that self-belief is what comes across. Fake confidence, he told us, just doesn't work in the same way. Studies Anderson is now conducting suggest that others can see the “tells.” No matter how much bravado someone musters, when he doesn't genuinely believe he is good, others pick up on his shifting eyes and rising voice and other giveaways. Most people can spot fake confidence from a mile away.

Women applied for a promotion only when they met 100 percent of the qualifications. Men applied when they met

50 percent.

Once we got over our feeling that Anderson's work suggests a world that is deeply unfair, we could see a useful lesson: For decades, women have misunderstood an important law of the professional jungle. It's not enough to keep one's head down and plug away, checking items off a list. Having talent isn't merely about being competent; confidence is a part of that talent. You have to have it to excel.

We also began to see that a lack of confidence informs a number of familiar female habits. Take the penchant many women have for assuming the blame when things go wrong, while crediting circumstance—or other people—for their successes. (Men seem to do the opposite.) David Dunning, the Cornell psychologist, offered the following case in point: In Cornell's math Ph.D. program, he's observed, there's a particular course during which the going inevitably gets tough. Dunning has noticed that male students typically recognize the hurdle for what it is, and respond to their lower grades by saying, "Wow, this is a tough class." That's what's known as external attribution, and in a situation like this, it's usually a healthy sign of resilience. Women tend to respond differently. When the course gets hard, Dunning told us, their reaction is more likely to be "You see, I knew I wasn't good enough." That's internal attribution, and it can be debilitating.

Perfectionism is another confidence killer. Study after study confirms that it is largely a female issue, one that extends through women's entire lives. We don't answer questions until we are totally sure of the answer, we don't submit a report until we've edited it ad nauseam, and we don't sign up for that triathlon unless we know we are faster and fitter than is required. We watch our male colleagues take risks, while we hold back until we're sure we are perfectly ready and perfectly qualified. We fixate on our performance at home, at school, at work, at yoga class, even on vacation. We obsess as mothers, as wives, as sisters, as friends, as cooks, as athletes. Bob Sullivan and Hugh Thompson, the authors of *The Plateau Effect*, call this tendency the "enemy of the good," leading as it does to hours of wasted time. The irony is that striving to be perfect actually keeps us from getting much of *anything* done.

SO WHERE DOES all of this start? If women are competent and hardworking enough to outpace men in school, why is it so difficult to keep up later on? As with so many questions involving human behavior, both nature and nurture are implicated in the answers.

The very suggestion that male and female brains might be built differently and function in disparate ways has long been a taboo subject among women, out of fear that any difference would be used against us. For decades—for centuries, actually—differences (real or imagined) *were* used against us. So let's be clear: male and female brains are vastly more alike than they are different. You can't look at scans of two random brains and clearly identify which is male and which is female. Moreover, each individual's confidence level is influenced by a host of genetic factors that do not seem to have anything to do with his or her sex.

Girls lose confidence, so they quit competing in sports, thereby depriving themselves of one of the best ways to regain it.

Yet male and female brains do display differences in structure and chemistry, differences that may encourage unique patterns of thinking and behavior, and that could thereby affect confidence. This is a busy area of inquiry, with a steady stream of new—if frequently contradictory, and controversial—findings. Some of the research raises the intriguing possibility that brain structure could figure into variations between the way men and women respond to challenging or threatening circumstances. Take, for example, the amygdalae, sometimes described as the brain's primitive fear centers. They are involved in processing emotional memory and responding to stressful situations. Studies using fMRI scans have found that women tend to activate their amygdalae more easily in response to negative emotional stimuli than men do—suggesting that women are more likely than men to form strong emotional memories of negative events. This difference seems to provide a physical basis for a tendency that's been observed in behavioral studies: compared with men, women are more apt to ruminate over what's gone wrong in

the past. Or consider the anterior cingulate cortex. This little part of the brain helps us recognize errors and weigh options; some people call it the worrywart center. And, yes, it's larger in women. In evolutionary terms, there are undoubtedly benefits to differences like these: women seem to be superbly equipped to scan the horizon for threats. Yet such qualities are a mixed blessing today.

You could say the same about hormonal influences on cognition and behavior. We all know testosterone and estrogen as the forces behind many of the basic, overt differences between men and women. It turns out they are involved in subtler personality dynamics as well. The main hormonal driver for women is, of course, estrogen. By supporting the part of the brain involved in social skills and observations, estrogen seems to encourage bonding and connection, while discouraging conflict and risk taking—tendencies that might well hinder confidence in some contexts.

Testosterone, on the other hand, helps to fuel what often looks like classic male confidence. Men have about 10 times more testosterone pumping through their system than women do, and it affects everything from speed to strength to muscle size to competitive instinct. It is thought of as the hormone that encourages a focus on winning and demonstrating power, and for good reason. Recent research has tied high testosterone levels to an appetite for risk taking. In a series of studies, scientists from Cambridge University followed male traders at a London hedge fund, all high rollers (with annual bonuses greater than \$5 million). Using saliva samples, the researchers measured the men's testosterone levels at the start and end of each day. On days when traders began with higher levels of testosterone, they made riskier trades. When those trades paid off, their testosterone levels surged further. One trader saw his testosterone level rise 74 percent over a six-day winning streak.

“If life were one long grade school, women would be the undisputed rulers of the world.”

There's a downside to testosterone, to be sure. As we've just seen, higher levels of the hormone fuel risk taking, and winning yields still more testosterone. This dynamic, sometimes known as the "winner effect," can be dangerous: animals can become so aggressive and overconfident after winning fights that they take fatal risks. Moreover, a testosterone-laced decision isn't always a better one. In research conducted at University College London, women who were given testosterone were less able to collaborate, and wrong more often. And several studies of female hedge-fund managers show that taking the longer view and trading less can pay off: investments run by female hedge-fund managers outperform those run by male managers.

So what are the implications of all this? The essential chicken-and-egg question still to be answered is to what extent these differences between men and women are inherent, and to what extent they are a result of life experiences. The answer is far from clear-cut, but new work on brain plasticity is generating growing evidence that our brains do change in response to our environment. Even hormone levels may be less preordained than one might suppose: researchers have found that testosterone levels in men decline when they spend more time with their children.

FOR SOME CLUES about the role that nurture plays in the confidence gap, let's look to a few formative places: the elementary-school classroom, the playground, and the sports field. School is where many girls are first rewarded for being good, instead of energetic, rambunctious, or even pushy. But while being a "good girl" may pay off in the classroom, it doesn't prepare us very well for the real world. As Carol Dweck, a Stanford psychology professor and the author of *Mindset: The New Psychology of Success*, put it to us: "If life were one long grade school, women would be the undisputed rulers of the world."

It's easier for young girls than for young boys to behave: As is well established, they start elementary school with a developmental edge in some key areas. They have longer attention spans, more-advanced verbal and fine-motor skills, and greater social adeptness. They generally don't charge through the halls like wild animals, or get into fights during recess. Soon they learn that they are most valuable, and most

in favor, when they do things the right way: neatly and quietly. “Girls seem to be more easily socialized,” Dweck says. “They get a lot of praise for being perfect.” In turn, they begin to crave the approval they get for being good. There’s certainly no harm intended by overworked, overstressed teachers (or parents). Who doesn’t want a kid who works hard and doesn’t cause a lot of trouble?

What doomed the women was not their actual ability to do well on the tests. They were as able as the men were. What held them back was the choice not to try.

And yet the result is that many girls learn to avoid taking risks and making mistakes. This is to their detriment: many psychologists now believe that risk taking, failure, and perseverance are essential to confidence-building. Boys, meanwhile, tend to absorb more scolding and punishment, and in the process, they learn to take failure in stride. “When we observed in grade school classrooms, we saw that boys got eight times more criticism than girls for their conduct,” Dweck writes in *Mindset*. Complicating matters, she told us, girls and boys get different patterns of feedback. “Boys’ mistakes are attributed to a lack of effort,” she says, while “girls come to see mistakes as a reflection of their deeper qualities.”

Boys also benefit from the lessons they learn—or, more to the point, the lessons they teach one another—during recess and after school. From kindergarten on, they roughhouse, tease one another, point out one another’s limitations, and call one another morons and slobs. In the process, Dweck contends, such evaluations “lose a lot of their power.” Boys thus make one another more resilient. Other psychologists we spoke with believe that this playground mentality encourages them later, as men, to let other people’s tough remarks slide off their backs. Similarly, on the sports field, they learn not only to relish wins but also to flick off losses.

Too many girls, by contrast, miss out on really valuable lessons outside of school. We all know that playing sports is good for kids, but we were surprised to learn just

how extensive the benefits are, and how relevant to confidence. Studies evaluating the impact of the 1972 Title IX legislation, which made it illegal for public schools to spend more on boys' athletics than on girls', have found that girls who play team sports are more likely to graduate from college, find a job, and be employed in male-dominated industries. There's even a direct link between playing sports in high school and earning a bigger salary as an adult. Learning to own victory and survive defeat in sports is apparently good training for owning triumphs and surviving setbacks at work. And yet, despite Title IX, fewer girls than boys participate in athletics, and many who do quit early. According to the Centers for Disease Control and Prevention, girls are still six times as likely as boys to drop off sports teams, with the steepest decline in participation coming during adolescence. This is probably because girls suffer a larger decrease in self-esteem during that time than do boys.

What a vicious circle: girls lose confidence, so they quit competing, thereby depriving themselves of one of the best ways to regain it. They leave school crammed full of interesting historical facts and elegant Spanish subjunctives, proud of their ability to study hard and get the best grades, and determined to please. But somewhere between the classroom and the cubicle, the rules change, and they don't realize it. They slam into a work world that doesn't reward them for perfect spelling and exquisite manners. The requirements for adult success are different, and their confidence takes a beating.

CONSIDER THE FOLLOWING TALE of two employees. A female friend of ours in New York was supervising two 20-something junior staffers, one female (whom we will call Rebecca) and one male (whom we will call Robert).

Even though Robert had been on the job for only a few months, he was already stopping by our friend's office to make off-the-cuff pitches for new ad campaigns, to comment on business strategy, and to share unsolicited opinions about magazine articles he'd recently read. Our friend often found herself shooting down his ideas, correcting his misperceptions, and sending him off for further research. "No problem" seemed to be his attitude. Sometimes he'd respond with a counterargument; other times, he'd grin and shrug his shoulders as he headed back

to his desk. A few days later, he'd be back in to pitch more ideas and to update her on what he was doing, even if all he had to say was "I'm still working on this."

Our friend was struck by how easily Robert engaged her, and how markedly different his behavior was from that of Rebecca, with whom she'd worked for several years. Rebecca still made appointments to speak with her and always prepared a list of issues for their discussions. She was mostly quiet in meetings with clients, focused as she was on taking careful notes. She never blurted out her ideas; she wrote them up with comprehensive analyses of pros and cons. Rebecca was prepared and hardworking, and yet, even though our friend was frequently annoyed by Robert's assertiveness, she was more impressed by him. She admired his willingness to be wrong and his ability to absorb criticism without being discouraged. Rebecca, by contrast, took negative feedback hard, sometimes responding with tears and a trip to her own office to collect herself before the conversation could continue.

If a woman speaks up first at meetings, she risks being disliked or even—let's be blunt—being labeled a bitch.

Our friend had come to rely on and value Rebecca, but she had a feeling it was Robert's star that would rise. It was only a matter of time before one of his many ideas would strike the right note, and he'd be off and running—probably, our friend was beginning to fear, while Rebecca was left behind, enjoying the respect of her colleagues but not a higher salary, more responsibilities, or a more important title.

Here's a thorny question: If Rebecca did behave just like Robert, exhibiting his kind of confidence, what would her boss think then? There is evidence that Rebecca wouldn't fare so well, whether her boss was male or female.

Which is why any discussion of this subject requires a major caveat. Yes, women suffer consequences for their lack of confidence—but when they do behave assertively, they may suffer a whole other set of consequences, ones that men don't typically experience. Attitudes toward women are changing, and for the better, but

a host of troubling research shows that they can still pay a heavier social and even professional penalty than men do for acting in a way that's seen as aggressive. If a woman walks into her boss's office with unsolicited opinions, speaks up first at meetings, or gives business advice above her pay grade, she risks being disliked or even—let's be blunt—being labeled a bitch. The more a woman succeeds, the worse the vitriol seems to get. It's not just her competence that's called into question; it's her very character.

Back at the Yale School of Management, Victoria Brescoll has tested the thesis that the more senior a woman is, the more she makes a conscious effort to play down her volubility—the reverse of how most men handle power. In the first of two experiments, she asked 206 participants, both men and women, to imagine themselves as either the most senior figure or the most junior figure in a meeting. Then she asked them how much they'd talk. Those men who'd imagined themselves as the senior figure reported that they would talk more; men who'd picked the junior position said they'd talk less. But women who'd selected the high-ranking role said they would talk the same amount as those women who'd envisioned themselves as the low-ranking woman. Asked why, they said they didn't want to be disliked, or seem out of line. In Brescoll's next experiment, men and women rated a fictitious female CEO who talked more than other people. The result: both sexes viewed this woman as significantly less competent and less suited to leadership than a male CEO who talked for the same amount of time. When the female CEO was described as talking less than others, her perceived competency shot up.

So confident women can find themselves in a catch-22. For now, though, for Rebecca and for most women, coming across as too confident is not the problem.

WHEN WE EMBARKED on this quest two years ago, we had a slight conflict of interest. As journalists, we were exhilarated by the puzzle of why high-achieving women were so lacking in confidence, but as women, we grew gloomy. Delving into research and interviews, we more than once found ourselves wondering whether the entire female sex was doomed to feel less than

self-assured. Biology, upbringing, society: all seemed to be conspiring against women's confidence.

But as our understanding of this elusive quality shifted, we began to see the outlines of a remedy. Confidence is not, as we once believed, just feeling good about yourself. If women simply needed a few words of reassurance, they'd have commandeered the corner office long ago. Perhaps the clearest, and most useful, definition of confidence we came across was the one supplied by Richard Petty, a psychology professor at Ohio State University, who has spent decades focused on the subject. "Confidence," he told us, "is the stuff that turns thoughts into action." Of course, other factors also contribute to action. "If the action involves something scary, then what we call courage might also be needed," Petty explained. "Or if it's difficult, a strong will to persist might also be needed. Anger, intelligence, creativity can play a role." But confidence, he told us, is essential, because it applies in more situations than these other traits do. It is the factor that turns thoughts into judgments about what we are capable of, and that then transforms those judgments into action.

The simplicity is compelling, and the notion that confidence and action are interrelated suggests a virtuous circle. Confidence is a belief in one's ability to succeed, a belief that stimulates action. In turn, taking action bolsters one's belief in one's ability to succeed. So confidence accumulates—through hard work, through success, and even through failure.

The natural result of low confidence is inaction. When women hesitate because we aren't sure, we hold ourselves back.

We found perhaps the most striking illustration of how the connection between action and confidence might play out to women's benefit in Milan. There we tracked down Zachary Estes, a research psychologist who's long been curious about the confidence disparity between men and women. A few years ago, he gave 500

students a series of tests that involved reorganizing 3-D images on a computer screen. He was testing a couple of things—the idea that confidence can be manipulated and the idea that, in some areas, women have less of it than men.

When Estes had the students solve a series of these spatial puzzles, the women scored measurably worse than the men did. But when he looked at the results more closely, he found that the women had done poorly because they hadn't even attempted to answer a lot of the questions. So he repeated the experiment, this time telling the students they had to at least try to solve all the puzzles. And guess what: the women's scores increased sharply, matching the men's. Maddening. Yet also hopeful.

Estes's work illustrates a key point: the natural result of low confidence is inaction. When women don't act, when we hesitate because we aren't sure, we hold ourselves back. But when we do act, even if it's because we're forced to, we perform just as well as men do.

Using a different test, Estes asked everyone to answer every question. Both the men and the women got 80 percent right, suggesting identical ability levels. He then tested the students again and asked them, after each question, to report their confidence in their answer. Just having to think about whether they felt certain of their answer changed their ability to do well. The women's scores dipped to 75 percent, while the men's jumped to 93. One little nudge asking women how sure they are about something rattles their world, while the same gesture reminds men that they're terrific.

Finally, Estes decided to attempt a direct confidence boost. He told some members of the group, completely at random, that they had done very well on the previous test. On the next test they took, those men and women improved their scores dramatically. It was a clear measure of how confidence can be self-perpetuating.

These results could not be more relevant to understanding the confidence gap, and figuring out how to close it. What doomed the women in Estes's lab was not their

actual ability to do well on the tests. They were as able as the men were. What held them back was the choice they made not to try.

The advice implicit in such findings is hardly unfamiliar: to become more confident, women need to stop thinking so much and just *act*. And yet, there is something very powerful about this prescription, aligning as it does with everything research tells us about the sources of female reticence.

Almost daily, new evidence emerges of just how much our brains can change over the course of our lives, in response to shifting thought patterns and behavior. If we keep at it, if we channel our talent for hard work, we can make our brains more confidence-prone. What the neuroscientists call *plasticity*, we call *hope*.

Katty Kay and Claire Shipman are the authors of [The Confidence Code: The Science and Art of Self-Assurance—What Women Should Know](#).